EDITORIAL ARTICLES.

RECENT CONTRIBUTIONS ON THE SUBJECT OF TUMORS.

1. Beitrage zur Statistik der Mamma Carcinome der Frau. Von Dr. Hildebrandt. *Deutsche Zeitschrift fuer Chirurgie*, Bd. XXV; Hft. IV u. V. (Contributions to the Statistics of Mammary Carcinoma in Women).
2. Zur Statistik der Mamma Carcinome und deren Heilung. Von Dr. Hans Schmidt. *Deutsche Zeitschrift fuer Chirurgie*, Bd. XXVI; Hft I. u. II. (Upon the Statistics of Mammary Carcinoma and upon Recovery Thereupon).
3. Sarcoma of the Female Breast. By Prof. S. W. Gross, M. D. *The American Journal of the Medical Sciences*, July, 1887.
4. Ueber Maligne Neurome und das Vorkommen von Nervenfasern in denselben. Von Dr. F. Krause (Halle). *Samml. klin. Vorträge* (Volkman), No. 293 and 94. (On Malignant Neuromata and the Occurrence of Nerve Fibres in the Same).
5. Pathogenesis (Histogenesis und Ætiology) der Aneurysmen. Von Prof. Dr. Hans Eppinger. (Graz). *Archives fuer klinische Chirurgie*, Bd. XXXV und Supplement. (The Causes and Method of the Development of Aneurisms).
6. "Die Malignen Tumoren der Gefässcheide." Von Dr. Carl Regnault. *Archiv. fuer Chirurgie*, Bd. XXXV, Heft i. (Malignant Tumors of the Blood-vessel Sheaths).

The subject of carcinoma of the mamma and its permanent cure forms the subject of two excellent statistical papers from the clinics of Berlin (Küster) and Göttingen (König). The authors, assistants at these clinics, have collected the material from 1875 to 1885. In the first paper, by Hildebrandt, the subject of discussion is considered more widely in a clinical way. In the second paper (Hans Schmidt) the protection assured to the patient by radical extirpation of the growth with clearing of the axillary region is closely analyzed.

Hildebrandt tries to make his statistics conform to the general plan laid out by Volkman and Sprengel, and, while considering minor points, he pays especial attention to the operative results as to return or permanent eradication. The two papers in certain points can well supplement each other.

Hildebrandt has found little to discuss in the mode of living and surrounding circumstances of his patients. In these respects cancer of the breast acts like that of other organs. The peculiar constitution

of the organ itself may in some way be favorable to the development of the disease.

Of 136 cases, 45 were between forty and fifty years, and 47 between fifty and sixty years, double the amount that occur in the preceding or succeeding decades.

Fifty-one of the above cases were between forty-five and fifty-five years of age. The gland at this time is going through anatomical and physiological retrograde changes. The influence of the menopause on the occurrence of cancer is not ascertained. Of 132 cases 85% were in married women; this figure corresponds to that given by Winniwarter, Oldenkop, Sprengel and Henry.

In 55 cases, where the fact has been noted, 46 have borne children, and of these four did not nurse. In exceptional cases the growth increased rapidly during pregnancy. In others the tumors appeared during lactation. After weaning a nodule remained in the breast and attracted attention. In some cases the affected breast had been nursed more; in others the opposite fact had been recorded. Altogether, the cases were too few to draw satisfactory conclusions as to the above points. Altogether, sexual and physiological processes and the changes induced in the breast make this gland a fertile ground for the development of abnormal growths. Though König makes a trauma a predisposing moment for the development of carcinoma in scattered cases, analysis of a set of cases gives us no positive support for such theory. In some cases eczema of the nipple had a long time preexisted. Hildebrandt does not go into hereditary details.

As to seat of the disease the left gland was as frequently affected as the right. The situation of the tumor in the gland had no influence on the time of infection of the regional lymphatic glands. Of 152 cases, 29 were free from such infection. In 94 cases the skin was free from the growth. The skin became in many cases only affected later in the disease.

The average duration of the tumor without any affection of the lymph glands and skin was $8^3/_4$ mos. Without affection of the skin alone $9^3/_4$ mos. Lymph glands were affected on average, the skin being free, after 11 mos. Both skin and lymph glands found affected,

on average of $13^1/_2$ mos. As with skin so with muscle, they become affected later. The pectoral fascia forms a sort of barrier. The fascia itself owes immunity to the peculiar construction of lymph spaces here.

In 152 cases 11 were scirrhous, 5 medullary and the rest of the ordinary variety of carcinoma.

Metastases were found in the lung (8), the liver (7), stomach (4), mediastinal glands (2), spleen (1), kidney (1), uterus (1), vertebral column (1), general carcinosis and internal metastases (9). Of 152 cases, 137 were operated on in the radical way as described in König's handbook. The amputation of the breast with the clearing of the axilla of glands and the infra- and supra-clavicular space is to be recommended. In cases where the tumor was benign this was not done. The incisions are made far into the healthy skin, and the author recommends in certain cases the advisability of Helferichs method of forming a skin and muscle flap from the pectoralis. By the latter method all fat tissue becomes apparent to the eye as well as touch, and it is to be adopted in cases of extensive glandular affection.

In König's clinic the mortality was 7.2%. All cases above 55 years died from pneumonia subsequent to the operation. Until the year 1880 mortality was 10%. Antisepsis has reduced this to 5% in the last five years.

Erysipelas complicated the convalescence of some cases where the axillary glands were extirpated, but rarely proved fatal.

If a return of the disease occurs, from our present knowledge it is rational to suppose that in some way the operation was not complete as to the extirpation of affected lymphatic tissue. In cases where return of the disease occurred (65) the growth appeared in the form of nodules in and beneath the skin (soon after operation). Also in the axillary or clavicular glands. (Ineffective operative measures). If the second mamma became affected, it could be rarely traced to the first as a cause.

The returns were observed mostly within six months after operation. If after three years no return has been observed, we may hope that the cure has been complete (Volkman). Of 102 cases collated by

Hildebrandt 23% may be called cured; but even here we must reject unobserved cases, which leave 21.7% cases permanently cured in the clinic of Kõnig.

(2) Doctor Hans Schmidt (Küster's clinic) presents us with 228 cases, being those operated on in the Augusta Hospital, Berlin, from 1871 to 1885.

In most cases the patients were operated on early, so that cases of inoperable character were not common.

In all cases the axilla, infra- and supra-clavicular regions were searched for glands, also the sides of the neck. The following results were obtained.

Of 163 cases diseased glands were found 158 times. In 3% cases no glands were detected. In 71% cases the affected glands could be diagnosed before operation. Lastly, in 26.25% cases glands were found at the operation which had not been diagnosed before incision. From the last observation it can be seen how little safety simple palpation gives against the disease of the axillary glands.

All the cases were operated on according to the Küster and Volkmann method. It was particularly important to avoid the injury of the subscapular nerve, else the patients would in days subsequent to operation show an inability to raise the arm.

The dressings were, as a rule, left on for twelve to fourteen days until the wound was thoroughly healed. If discharges appeared after two to three days a second dressing was applied over the first. A foul secretion or temperature alone indicates removal (sepsis).

Mortality from 1871 to 1885 was 10.8%; from 1883 to 1885, 5.2%. In 1885, $2^1/_2$%.

Causes of death were: Sepsis, brown atrophy of the heart, embolism of the pulmonary vein, broncho-pneumonia. According to Küster, if cases remained free from a return of the disease for three years after operation they were considered cured. Even here there is, as in other diseases, a chance of return.

If, on considering his 228 cases those are deducted which were inoperable (6), and those dying as result of the operation (24), there remains 197 cases to consider. To pass upon the possible complete

and radical cure only those cases operated on since 1882 are considered. Of 93 such cases, *20 cures* remain, *21.5%* who remained free from return of disease for three years and over. 26.4% are free for two years from return.

In cases where return occurred it was observed mostly in the skin cicatrix, muscle, sternum, other mammary gland, ribs, pleura, metastases in other organs, the glands of the neck, infra- and supraclavicular regions, and finally one case where the return occurred in the axillary gland.

The whole paper tends to support certain dicta of Prof. Küster.

The typical removal of the axillary glands is an essential step in extirpation of the mamma, aside from the fact whether before or after division of skin glands are felt in axilla.

The above assures a better result as to return of disease; with the antiseptic methods it does not increase the danger of the whole operation. The typical removal of axillary glands should be done as soon as the diagnosis of malignant disease is established. If, after extirpation, a tumor is proven microscopically carcinomatous, the axilla should immediately be searched for diseased glands and cleared. Benign tumors can be simply extirpated with retention of rest of the mamma.

The subscapular nerves should be protected from injury and the arm of affected side left in the fixed dressing only 24 hours. The permanent antiseptic dressing and uniform compression, and leaving the bed early after the operation, are essential factors. We have in the early operation of the carcinoma and the simultaneous removal of the regionary glands a method by which it is possible to permanently relieve a considerable class of cases of the disease.

(3) Dr. S. W. Gross, in a paper based upon a study of 156 cases, finds that of the varieties of sarcoma, the spindle-celled, which include the fibrous, constitute 68%, the round-celled 27%, and the giant-celled 5% of all cases.

Of the entire number only 4, or 2.70%, occurred before the sixteenth year, or during the developmental state of the mamma; 67, or 45.27%, appeared between the sixteenth and fortieth years, or at a

period when the breast and genitalia are functionally most active; and 77, or 52.02%, after the fortieth year, or during the period of their functional decline. Their etiology is most obscure, since their development is rarely traceable to injury or disease, and is not influenced by hereditary predisposition, while the social state and menstrual irregularities or arrest are surely unimportant agents in their production. Their growth might naturally be expected to be connected with menstruation, pregnancy, or lactation, or with conditions which render the mammary gland more vascular; but the influence of an increased flow of blood to the organ, which has been assumed by certain authors, is not confirmed by an analysis of the cases that he has collected. Thus, in only three examples was an increase in bulk witnessed at the menstrual period, while in two the tumor became smaller. In one the rapid growth began during pregnancy, and in two at the menopause.

During their further progress sarcomata continue, as a rule, mobile and free from superficial or deep attachments; the contiguous structures are not invaded by tumor elements; the skin remains natural in color and texture; the subcutaneous veins are not enlarged, the nipple is normal; and the associated lymphatic glands are not contaminated. To these general statements the following exceptions were noted.

They are locally infectious in 14.19% of all cases. The skin is ulcerated in 18.59%, and discolored in 23%. The superficial veins are enlarged in 15.39%. The nipple is retracted in only 3.25%. The axillary glands are infected in only 1.9%, and their immunity is a valuable sign in the differential diagnosis. A discharge from the nipple occurs in one out of every nine and a half of cystic sarcomata. Pain is met with in 35.71% of all cases.

Sarcoma is eminently malignant. Thus, of the 92 cases only 1 ran a natural course, it being an example of round-celled tumor of both breasts, that proved fatal, with presumed secondary deposits, in seven months from the first appearance of the disease. The remaining 91 were subjected to the knife. Of these, 32 were well for periods which varied between one month and ten years and nine months; 42 were marked by local recurrence; in 8, not only was there regional reproduction, but metastases were found post-mortem; 3 recurred, with

unmistakable evidence of general dissemination; 4 were characterized by metastases, and 2 by presumed metastases, without recurrence. In other words, 64.83% of these cases were endowed with malignant features.

Of the 53 cases in which the disease recurred locally, in more than one-half, or 57.7%, the return took place in six months, while after 12 months there were only 13, or 28.8%, and of these there were only 4, or 8.8%, after 2 years. These statements lead to the belief that the chances for the patient are relatively good after the lapse of 2 years, and that the prognosis is all the more favorable as the period of freedom from signs of local contamination prolongs itself. As the latest date of reproduction was 4 years, it may be assumed that the 12 cases which remained well after the lapse of that time were permanently cured. The average date of recurrence was 10½ months, and the total life of these patients from the first observation of the disease to the final report after the last operation was 7 years and 9 months. The number of recurrences, or operations for recurrence, was 1 in 23 cases, 2 in 13 cases, 3 in 7 cases, 4 in 1 case, 5 in 4 cases, 6 in 2 cases, 7 in 1 case, 12 in 1 case, and 22 in 1 case.

Sarcoma is less infectious locally, but more infectious as regards the general system, than carcinoma. Its more relatively benign character is shown not only by the larger proportion of cures, but also by the fact that the average duration of life, from the first observation of the disease to the date of the last removal after operation, is forty-two months longer; and this contrast becomes the more striking when it is stated that the majority of the sarcomatous patients were still living, and the majority of the carcinomatous subjects were dead.

Not only is this statement true for sarcomata in general, but it holds good for the three varieties, since the average life for round-celled sarcoma is fifty-four months, ninety months for the spindle-celled, and one hundred and eight months for the giant-celled.

The treatment may be summed up in a few words. The entire breast, along with any skin that may be invaded, must be extirpated, especial care being paid to the complete removal of every particle of paramammary fat and the fascia of the pectoral muscle, in which tissues

experience shows that recurrence takes place. In the event of repullulation the growths should be freely excised as fast as they appear, as such a practice not only prolongs life, but may bring about a final cure.

(4) In an exhaustive brochure on malignant neuromata (false neuroma) and the occurrence of nerve fibres in the same, Dr. Fedor Krause has presented the subject both from a clinical and histological standpoint. His conclusions are drawn from a set of cases observed in the clinic of Volkmann. Though scattered cases of neuromata are recorded in literature, their consideration can hardly be said to be complete.

Virchow, Von Recklinghausen among pathologists, and Volkmann, Bardeleben, Stromeyer and Küster, among the clinicians, have described these tumors. The author has collected twenty-seven cases in the literature of clinical interest; these include three of his own. These tumors do not simply include those occurring in amputated stumps and cicatrices, but those of traumatic and spontaneous origin which are found in the course of the large nerve trunks or their smaller branches. They are closely adherent to the nerves, and seem to involve the nerve fibres in their growth. The nerves seem to pass through the tumors or around them to one side.

As far back as 1803, Odier first described tumors which seem to correspond to those the subject of this monograph. It remained for Virchow to place their histology on a firmer basis. Volkmann in a case published by him first pointed out the probable relationship of these neuromata to the malignant tumors. (Sarcomata). These neuromata occur more especially on the larger nerve trunks of the upper and lower extremities, though the very small cutaneous branches are not exempt from their occurrence. In the cases so far recorded the median in the arm, the sciatic in the thigh and the median in the forearm have been the seat of these tumors in the above order of frequency. They vary in size from the smallest dimensions to that of a child's head. They are adherent, as mentioned above, to the nerve trunk. Their shape may be oval, round and nodular; elastic or hard in consistence. They may be single, in other cases multiple, involv-

ing the principal nerve trunks. The adjacent structures, periosteum of the bones and muscle, in some cases, become involved in the growth of the tumor. The tumor may be movable through the unbroken skin, in a direction transverse to the course of the nerve trunk. Both sexes are equally liable to its occurrence, and no age has been founed exempt from the malady. Heredity in one case seemed to have played a role where both mother and daughter were affected with these tumors. The etiology is equally obscure, though a trauma was present in some cases.

The growths increase rapidly in size, and after extirpation we have marked and rapid returns of the tumors. Once subjected to pressure, they act like malignant growths elsewhere and undergo necrotic changes, with subsequent hemorrhages. It is surprising to note how much compression a large nerve will undergo from one of these growths (case of author, median nerve), and yet the most careful examination will fail to find any change in the electrical reaction from the normal.

The symptomatology of this class of neuroma is not so clear as to enable us to make a diagnosis in all cases. For the symptoms on the part of the nervous system may be prominent or quite obscure or absent. Pain and abnormal sensations (formication, tickling sensations), have been observed in some cases as first symptoms. Shooting pains in the course of the affected nerve, a subjective feeling of numbness, and objectively a diminished sensibility have been noted. If the muscular branches are affected the patients complain of weakness and in some cases actual paralysis may result. Of greatest moment must be the nervous phenomena to be observed in the course of some special nerve trunk before the actual presence of the tumor is suspected. The tumor in one case of the author appeared as a nodular growth on the radial side of the metatarsal bone of the right hand on the palmar surface. In another the growth followed a trauma and appeared along the course of the median nerve in the axilla. In a third case the tumor was of slow growth and appeared on the calf of the left leg, attaining the size of a child's head.

Histologically, these tumors should be classed among the sarco-

mata, round or spindle-celled, with a varying amount of intercellular substance. The cellular growths are seen in an early stage to begin in the perineurium (Key and Retzius) of the nerve trunk. Increasing in extent, they gradually involve also the intra-fascicular connective tissue of the nerve. Growing as they do in and along the connective tissue lamellæ of these structures, the tumor in time involves the nerve fibres. The fascicles of the nerve trunk are pressed apart, and on section a pinkish gray tumor mass is seen to be traversed by whitish strands in the original direction of the nerve. Some of these fascicles are unchanged. If others are examined microscopically, it is seen that the sarcomatous elements have also pressed the primitive nerve fibres apart. There is under the microscope the picture of a labyrinth of nerve fibres (medullated) traversing a collection of spindle and round cells. In these places the author has concluded from an actual comparison of sections of the healthy nerve and those of the tumor that an actual *increase* of *medullated nerve fibres* has taken place. This perhaps might in some way be caused by the activity of cellular growth in the tumor.

Non-medullated nerve fibres seem to exist in these tumors. Their presence might be accounted for, in part, in the following manner. As a result of pressure of the tumor mass, the axis-cylinder of the nerve fibre becomes much swollen, the medullary sheath gradually disappears. The axis-cylinder alone remains. The latter does not stain with Weigert's method (hematoxylin), which was made use of in this work. Kahler, by injecting melted wax into the spinal cord of rabbits, has caused similar results in the axis-cylinder of the nerve fibres of the cord.

The prognosis in these growths must, on the whole, be looked on as unfavorable. The outlook is more serious in those tumors where the intercellular substance approaches the type of mucous tissue (myxo-sarcom). In the harder tumors (fibro-sarcom) a return has resulted of tumors approaching the mucous type.

The time which must elapse after extirpation before the patient can be considered safe from a return of the growth varies. In one case the patient was free from symptoms for six years, and then a return

was noticed. Nor does the return necessarily occur in the old cicatrix, but tumors may appear in the healthy part of the nerve trunk. After complete extirpation return has been the rule; in some cases amputation or disarticulation of the affected extremity had to be resorted to. In other cases, even after such radical measures, the tumors have reappeared in the nerve roots of the spinal cord and caused pressure effects.

From the above it will be seen that the therapy must vary in different cases. If the neuroma is centrally situated on the nerve trunk, a resection of the nerve is proper. Enucleation of the tumor can only be thought of where the tumor is situated on the side of the nerve and surrounded by a distinct capsule.

Multiple tumors closely adherent to adjacent parts (periosteum) would point to amputation. In the latter case exploratory incisions should be made above the amputation limit, along the course of the nerve trunks, in search of small grayish pink nodules on the same, where after extirpation repeated return of the tumors, results amputation is the best course, and even this does not insure against future trouble.

In closing it must be remarked that not only are the clinical conclusions valuable, but the histological work of this paper is one of excellence, conducted, as it was, under the guidance of Prof. Weigert, of Leipzig.

5. The thirty-fifth volume and supplement of Langenbeck's Archives contains in itself a very exhaustive contribution to the literature of the pathogenic histogenesis of aneurysms. The author, Prof. Hans Eppinger, of Graz, has in this work embodied the result of a series of investigations stretching over a period of years. The views expressed are in some respects original and will meet much criticism.

The work first considers the nomenclature of aneurysms and what is known of their pathogenesis (histogenesis and etiology). The author then departs into a classification of aneurysms according to their pathogenic histogenesis into (1) the congenital aneurysms, (2) the parasitic aneurysms, (3) the simple aneurysms (traumatic). From the vast literature and schemas of the subject of aneurysms, Prof. Eppinger has

selected that of O. Weber as being the least objectionable in a pathological standpoint. Without going into lengthy detail we have only space to say that Prof. Eppinger conceives no such distinction as that of true and false aneurysms. Logically an aneurysm must be such in a pathological sense. We cannot speak of false carcinoma, and therefore not less consistent is it to speak of false aneurysms. Thus it must be seen that Prof. Eppinger confines his conception of an aneurysm to those structures included only under Weber's aneurysma spontanea et vera—all arterial ectasic varix and the so-called sacciform and dissecting varieties are excluded, as also all the false forms (hæmatoma circumscribed and diffused) and the arterio-venous aneurysms. The aims of pathological unity would certainly be favored if such a view were accepted. Clinically it has been hitherto found convenient to classify certain conditions (rupture of arteries and formation of sac) as false aneurysms. To-day scientific advances demand greater simplicity, and in this way may be attained the true combination of the teachings of pathology and the bed side. The author has endeavored to give us a true contribution to the pathogenesis of aneurysms. The views are so novel, and differ so from those now current that we will endeavor to clearly outline them. Under congenital aneurysms, the author classifies those formations found in the course of arteries described by Kussmaul and Maier in their work on periarteritis nodosa. He has himself observed two cases of this very rare condition, one in a child æt. 10 years (coronary arteries). In this condition a series of sections and study of the same proved that a periarteritis in a true sense does not occur. In all the affected vessels there was found a congenital defect of the elastic coat, the intima and the adventitia being intact. The muscularis in some cases may be found stretching over the cupola of the aneurysm in the course of the artery. In all cases the elastica terminates suddenly at the entrance to the aneurysmal sac. There is no endarteritis, no sclerotic changes but a *tear defect* (congenital) of the elastica which paves the way to aneurysmal formation.

The intima may be somewhat thickened but the general conclusion remains as above.

Syphilis (Rokitansky, Eichler, Baumgarten, Virchow) cannot be looked on as a predisposing agent.

By far the most interesting portion of Prof. Eppinger's work lies in the contribution to the literature of *mycotic endocarditis* and the aneurysms found in connection with this disease. These aneurysms are discussed under the heading of parasitic aneurysms or aneurysms of mycotic-embolic origin (mycotic-embolic aneurysms). In mycotic endocarditis, small particles, containing myriads of parasites, become detached from their valvular seat. They are carried into the general circulation and the formation of embolism and thrombosis of a *mycotic nature* ensues. Already an immense bacteriological literature has amassed itself on this subject alone. Dr. Osler who has had an extraordinarily large number of cases of this nature has gone as far as any one, both clinically and pathologically to prove the mycotic nature of these processes.

Prof. Eppinger goes a step further to prove that aneurysmal formations found on arteries in this disease (malignant endocarditis) are of mycotic origin, and not, as formerly thought, the results of simple arteritis. This mycotic embolism and thrombosis is found mostly at the point of division of an artery, and no artery has escaped their formation. Once arrested in the lumen of the artery, these myriads of streptococci and staphylococci set up irritation in the wall of the artery as they have done in the tissue of the endocardium (valves, etc.). Inflammatory exudative changes begin in the adventitia (periarteritis acuta) progressing toward the intima. The integrity of the media is disturbed (mesarteritis) and the elastica bursts. If the process goes on rapidly miliary hæmorrhages occur, if less rapidly aneurysmal formations. Multiplicity is a characteristic of these processes, and all arteries from the smallest to the largest may be affected. In all cases the elastica is compromised at the junction of the aneurysm with the lumen of the vessel. The muscularis may or may not be affected. As shown above the favorite point for development of these aneurysms is the dividing point of a vessel. In the acute cases the mycotic emboli are found to be adherent to the point of entrance of the aneurysm. In chronic cases this link in the chain of evidence is

generally lost. The author proposes for this special class the name of mycotic-embolic aneurysm. It is to be regretted, however, that Prof. Eppinger has confined the technique of his work to the staining and study of hardened sections. In no case was the domain of pure bacteriological cultures and control experiments on animals entered upon. The author would classify among the above class of aneurysms (parasitic) those aneurysmal formations to be found in arteries running in the walls of tuberculous cavities of the lung. These aneurysms are fully described in the literature (Fraentzel, Mayer, Ziegler, Weigert, Orth). The latter has found in the walls of such arteries numerous tubercle bacilli with the presence of tubercle tissue. The histogenesis of this aneurysm is the tubercle bacillus. The bacilli invade the adventitia of the vessel penetrating even through the media. Through their activity the layers of the adventitia and media become infiltrated with tubercle tissue. By an erosion process the wall of the artery looking toward the interior of the cavity becomes thinned. It being now the seat of tuberculous changes and hyalin degenerations, the intima becomes thickened. Now the artery may, in its lumen, become obliterated or the elastica being compromised and the thickened intima having lost its resistance capacity, aneurysmal bulging and aneurysm results.

In the concluding chapter the author discusses the histogenesis of the simple aneurysm. (Aneurysma simplex traumaticum). The term traumatic being misleading this is omitted and the old nomenclature adhered to. Prof. Eppinger has been content here to compare the mechanical theory (Virchow, von Recklinghausen) and the imflammatory theory of chr. endarteritis (Rokitansky, Kuster) by the light of his own studies. He concludes that the simple aneurysm has a mechanical pathogenesis (etiology), though every trauma does not lead to aneurysm. The intima may alone be compromised and perfect healing result. Where the media has been affected this has resulted in restoration. The elastica, however, once torn an aneurysmal bulging of the vessel results. This may occur in perfectly healthy arteries or in those the seat of atheromatous processes.

A vessel may be the seat of extensive chronic endarteritis with contractions and cicatrizations but no aneurysm result. On the other

hand if aneurysms be found in such vessels it does not follow that the inflammatory changes have been an etiological factor.

6. In this clinical study of the malignant tumors of the sheaths of bloodvessels the author has collected 18 cases occurring in theliterature. Some of the cases were operated on in Czerny's clinic, Heidelberg. Of these 18 cases there were 14 sarcomata and 6 carcinomata. Carcinomata of the sheaths of bloodvessels are very rare. The etiology is obscure. It is to be noted that severe pain is the first symptom at the seat of development. In other respects the points of difference from sarcomata apply here, as in other tumors, in other regions. The sarcomata are myxo. fibro-, melanodes, fuso-cellulare, globo-cellulare, giganto-cellulare and mixed forms. They may be soft or hard, the latter being the common form. In one case a sarcoma existed in the wall of a cyst in the sheath of the vessel. In some cases it is not possible to determine whether the tumor has originated from the tissue of the sheath or the neighboring lymphatic structures. In some cases (3) there was a distinct traumatism as an exciting cause. Age plays no important role. In twelve cases of sarcomata the ages varied from 20 to 50 years. In one case the patient was aged 13, another 71. Six carcinomata occurred in 40 to 50 years. These figures are too few for valuable conclusion. The development of sarcomata varies from 4 weeks to 6 years. There is no case mentioned of arrest of growth.

As to diagnosis, the tumors are found in the large vessels of the neck, arm, thigh and popliteal space. Carcinomata occur almost exclusively in the neck. The tumors present an ovoidal shape along the course of the vessel. In the arm beneath the fascia they are less movable than when the tumor has broken through and lies above this structure. In the neck and axilla they are slightly movable, fascia being thin here. When uncovered by fascia the tumors appear irregular and nodular in shape. The situation of the vessel alongside the tumor aids the diagnosis. But the vessel in all recorded cases was not found, it being pushed aside. In one case the tumor diminished the lumen of the vessel, causing a murmur. Veins are narrower in most cases. In others they are thrombosed. Clinical symptoms of this latter accident are absent on account of a free collateral circulation. The diagnosis from aneurysm is difficult in some cases.

The safety of the patient lies in complete extirpation of the tumor. It may be necessary in some cases to resect both artery and vein. In others ligation is resorted to for hemorrhage. Where the tumor involves Hunter's canal the safest proceedure is amputation. In more favorably-situated tumors the vessel may be exposed above and below the growth, ligatures passed so that should the vessel be wounded during resection ligation may proceed immediately. In all cases it is well to prepare the mind of the patient for a possible amputation.

HENRY KOPLIK.

OLLIER ON SIMPLIFICATION OF THE POST-OPERATIVE TREATMENT OF RESECTION OF THE KNEE.[1]

Professor Ollier's contribution with the above title contains scarcely anything really new to surgeons familiar with the use of iodoform dressings and with sublimate dressings, and also with the management of plaster of Paris splints; and, considering the number of times the first person (usually plural) is used, it is perhaps to be regretted that the names of other surgeons never appear in the memoir except as a preliminary to the demonstration of, in one case, an encroachment upon Professor Ollier's claims of priority, and in the other, a confession by Lucas-Championière of his unwillingness to leave carbolized gauze dressings unchanged for more than a few days after excision of the knee. M. Ollier has, however, this excuse that so much has been done by so many other surgeons in every country of late years in the direction of simplifying dressings for excisions and other operations, that finding it impossible to make full acknowledgment to all, he may be right in doing justice only to himself.

"To thine ownself be true,
Thou canst not then be false to any man"

may be a precept applicable here, but it is a dangerous doctrine, and M. Ollier does not like it when followed by an English surgeon who re-contrived a method already published by himself.

Taken as a whole, however, M. Ollier's paper is one of great value,

[1] Memoir by Prof. Ollier in *Revue de Chirurgie* for August, 1887.